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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/532,516

04/25/2005

John Allen Hilton

P/382-152

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EXAMINER

KONG, SZE-HON

ART UNIT

PAPER NUMBER

3661

MAIL DATE

DELIVERY MODE

01/09/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/532,516	Applicant(s) HILTON, JOHN ALLEN	
	Examiner SZE-HON KONG	Art Unit 3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/25/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 4/25/2005 was filed. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

3. The disclosure is objected to because of the following informalities: The term "a computer system wether" (page 3, line 23) is not a commonly known term in the art.

Appropriate correction is required.

Claim Objections

4. Claims 10, 17 and 18 objected to because of the following informalities:

The term "the device" (claim 10, line 2, 3 and 6; claim 17, line 3, 10 and 17; and claim 18, line 4) is not compliant with antecedent basis and it seems to the Examiner that it is meant to read "the controller".

The term "applied" should be added after the term "a three-dimensional torque" (claim 10, line 9).

The character ',' (claim 17, line 9 between "a three-dimensional" and "torque") should be removed.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-6, 10-14, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paulsen et al. (3,490,059) and Brannon (5,854,622).

For claims 1-6, 10-14, 17 and 18, Paulsen discloses an apparatus having a symmetrical arrangement of four suspensors, arms arranged to be normal to the faces of a tetrahedron, letting the body be constrained by the arms, the arms define a point of suspension about which the platform, the gripping means are free to rotate, a flexural pivot (col. 3, lines 3-27); the suspensors restrain translational movement of the platform relative to the reaction support and permit limited rotational movement about the suspension point; and an electrical measuring system may be connected to the apparatus to measure torques about three or more axes (Abstract); sensing equipment

Art Unit: 3661

is provided for each of the axes and acts simultaneously to determine torque about all three axes at the same time and signals are fed from indicators to a collator to produce indications of the total torque and its direction of application (col. 3, line 73 – col. 4, line 3); the arms are in eight degrees of constraint (fig. 2); cylindrical bores are formed to freely receive suspensors, the arm having part-spherical profile is slidable along the bores and the arms are rotatable relative to the axis of the bore (fig. 2 and col. 6, lines 51-60); and the system investigating reaction torque effects under various conditions of operation of aircraft and space vehicle components and determine the amount of rotational movement or torque developed by components in response to maneuvers and forces developed with respect to the force detection (col. 1, lines 35-55). Brannon discloses the input apparatus is connected to a computer through a standard computer port for computer control (Abstract).

Paulsen does not specifically disclose the response detection means has means for directly monitoring response in three and only three of the four arms and the device further comprises means for calculating from data representing the monitored response in the three arms the values of a response in the fourth arm. Brannon discloses a input control system having sensors on three of the arms monitoring the force and torque applied to handle 12, the fourth arm (Fig. 6, col. 5, lines 46-59). It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the invention of Paulsen to include sensors on three of the four arms in the system to monitor force and torque applied to the fourth arm, taught by Brannon to

Art Unit: 3661

reduce cost for reducing number of sensors in the system.

8. Claims 7-9, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paulsen et al. (3,490,059), Brannon (5,854,622) and further in view of Hilton et al. (5,798,748).

For claims 7, 8, 15 and 16, Hilton discloses optical detectors associates with each arm arranged in the same plane and having respective optical axes transverse to the axis of the associated arm (fig. 2, 3 and col. 13, line 63 – col. 14, line 10).

Incorporating a total of 6 optical sensors arranged in three of the four arms is a matter of design choice. Brannon discloses sensors disposed in pairs around three of the four arms (fig. 6). It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the invention of Paulsen to include optical detectors associates with each arm, taught by Hilton to accurately monitor the force and torque applied on the arms of the system due to the high sensitivities of such sensor.

For claim 9, Hilton discloses an array of sensors for each of the arms to provide readings to resolve the required output signal (col. 22, lines 5-29). It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the invention of Paulsen to include an array of sensors for each of the four arms to provide eight readings, taught by Hilton to accurately resolve the control signal of the input system.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SZE-HON KONG whose telephone number is (571)270-1503. The examiner can normally be reached on 7:30AM-5PM Mon-Fri, Alt. Fri. Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

1/5/2009

/SZE-HON KONG/
Examiner, Art Unit 3661
/Thomas G. Black/
Supervisory Patent Examiner, Art Unit 3661